

Amendments to the Specification:

Please amend the specification as follows:

Please replace paragraph number **0087** with the following rewritten paragraph:

In one embodiment, a four channel detector, operating in a variable humidity environment, detects transient chemical events (malodors) of unknown composition and triggers an alarm/response via an RF link when a programmable threshold value is exceeded. In one aspect, no data is transmitted from the sensor, just an alarm state. A typical response curve to a transient event is shown in FIG. 4 for such a device, and an example of such a device is shown as a square-shaped printed circuit board in FIG. 5; whereby the printed circuit board is preferably 1.25" x 1.25" in size and whereby the backside contains the battery and the antenna. In a preferred embodiment, there is no pneumatic system and the detectors are continuously exposed to the environment.

Please replace paragraph number **0088** with the following rewritten paragraph:

In certain aspects, devices according to the present invention are particularly useful in fire detection and prevention activities. In such embodiments, devices of the present invention preferably include a PCS array and one or more additional sensor modules such as a photodetector, an ionization detector and a thermal detector. Published PCT Application WO00/79243, which is incorporated by reference for all purposes, discloses sensor systems including multiple sensor types which are useful for fire detection and prevention applications as well as for other detection applications as described herein. Signals from the PCS array and other included sensors are monitored and processed by an algorithm configured to detect events and nuisances and discriminate between fire sources and nuisance sources with a high degree of confidence so as to reduce the occurrence of false positives. FIG. 6 shows an example of a fire detection system architecture including detection devices according to an embodiment of the present invention. Nodes are defined as a collection of sensors/detectors at a single physical location. Zones are defined by physical relationships between nodes. The

multi-level architecture for data analysis shown in FIG. 6 makes the system both flexible and scalable.

Please replace paragraph number **0093** with the following rewritten paragraph:

Once an event is detected, the second part of the algorithm identifies the nature of the event as a fire or a nuisance. FIG. 8 illustrates a model using Soft Independent Modeling of Class Analogy (SIMCA). In particular, FIG. 8 shows the results for a SIMCA model for fire and nuisance tests that exceed the positive detection threshold. The line separating these two regions was drawn to minimize the number of false negatives, whereby a false negative corresponds to a case where the actual event is a fire but no alarm is sounded.

Please replace paragraph number **0098** with the following rewritten paragraph:

FIG. 9 illustrates examples of chemical filter systems for which an end-of-service life indicator (ESLI) module including one or more PCS sensors is useful. In particular, FIG. 9 shows gas masks having ESLI for chemical filters for military, homeland security and industry. Such uses may be for: forward-deployed personnel, weapons inspection, embassy/civilian personnel, first responders (fire department personnel, police department personnel, emergency management specialists), and hazardous chemical handling. When an alarm is detected, it is sent from an ESLI annunciator or wireless transmitter/receiver, which may be durable inside the mask, and the alarm information provided may include user ID, date and time. Each of the PCS sensors are preferably about 2 mm in size and are disposed in the filter bed of the chemical filter of the gas mask.

Please replace paragraph number **0110** with the following rewritten paragraph:

Solutions and dispersions of intrinsically conducting polymers may also be deposited. Such materials preferably complement the sensing characteristics of the sensors described above. Preferred conductive polymers include polyaniline and polythiophene(s), whose structures are shown in ~~FIG.s~~ FIGs. 20(a) and 20(b). In particular, FIG. 20a shows the chemical structure of polyaniline in its insulating state and its conducting state (following protonation by an acid, HX), and FIG. 20b shows the chemical structure of poly(3-substituted-thiophene) where R = H, or alkyl, [OX] = oxidizing agent, in its insulating state and its conducting state (following oxidative 'doping'). During the conversion of these polymers to their conducting state, an anion (or counterion) is formed either as the conjugate acid following protonation of polyaniline, or as an anion of the oxidizing agent in the case of polythiophene. It has been determined that the structure and stoichiometry of these counterions play an important role in the selectivity and sensitivity of the conductive polymer to various VOCs.

Please replace paragraph number **0111** with the following rewritten paragraph:

Other sensor materials include enzyme-based biogel sensors. Literature reports establish the feasibility of immobilizing enzymes and other proteins in stable, porous, silica glass matrices via an encapsulation process involving sol-gel synthesis methods. For example, as disclosed in U.S. Patent 5,200,334, which is hereby incorporated by reference in its entirety, copper-zinc superoxide dimutase, cytochrome c, and myoglobin can be immobilized using mild conditions such that the biomolecules retain their characteristic reactivities and spectroscopic properties. One key feature in synthesizing this new type of material, termed here as biogel, is the flexible solution chemistry of the sol-gel process. Research in this area has emerged rapidly throughout the world and it is now well established that a wide range of biomolecules retain their characteristic reactivities and chemical function when they are confined within the pores of the sol-gel derived matrix. Such encapsulation process is shown schematically in FIG. 21. In particular, FIG. 21 provides a schematic

diagram of the sol-gel encapsulation of indicator biomolecules. “(a)” shows the formation of sol particles during initial hydrolysis and polycondensation. “(b)” shows the addition of indicator biomolecule (squiggly lined object) to the sol. “(c)” shows the growing silicate network beginning to trap the biomolecules. “(d)” shows the indicator biomolecules immobilized in the gel.